

Claims

1. Microswitch (1) comprising:

- 5 - a deformable membrane (12) attached to a substrate (3),
- actuating means (4) designed to deform the membrane (12), from a first stable position of the microswitch (1), in such a way as to establish an electric contact between at least a first conducting pad (5) formed on the substrate (3) and at least a second conducting pad (6) formed on a
- 10 bottom surface of the membrane (12), in a second stable position,
- and electrostatic holding means designed to hold the microswitch (1) in the second stable position and comprising complementary electrostatic holding means (15, 9) respectively fixedly secured to the membrane (12) and to the substrate (3),
- 15 microswitch characterized in that the membrane (12) comprises at least:
 - two substantially parallel flexure arms (13) attached to the substrate (3) via at least one of the ends thereof and comprising the actuating means (4),
 - and at least one contact arm (14), substantially parallel to the flexure
 - 20 arms (13), arranged between the flexure arms (13) and attached to the flexure arms (13) in the high deformation areas (20) of the flexure arms (13), the contact arm (14) moving in a direction substantially parallel to the substrate (3) on actuation of the microswitch (1), and comprising the electrostatic holding means (15) of the membrane (12) and the second
 - 25 conducting pad (6).

2. Microswitch according to claim 1, characterized in that the contact arm (14) supporting the electrostatic holding means (15) is elongate.

30 3. Microswitch according to one of the claims 1 and 2, characterized in that the two ends of the flexure arms (13) are fixedly secured to the substrate (3),

the contact arm (14) being attached, via the central part thereof, to the flexure arms (13) at the level of their respective central parts.

5 4. Microswitch according to one of the claims 1 and 2, characterized in that each flexure arm (13) comprises a first end fixedly secured to the substrate (3) and a second end fixedly secured to the contact arm (14), the second ends of two adjacent flexure arms (13) being respectively fixedly secured to opposite ends of the corresponding contact arm (14).

10 5. Microswitch according to any one of the claims 1 to 4, characterized in that the actuating means (4) of the microswitch (1) comprise a thermal actuator (7).

15 6. Microswitch according to claim 5, characterized in that the thermal actuator (7) comprises a heating resistor (8) inserted in at least one end of the flexure arms (13).

20 7. Microswitch according to any one of the claims 1 to 4, characterized in that the actuating means (4) of the microswitch (1) comprise a piezoelectric actuator.

8. Microswitch according to any one of the claims 1 to 7, characterized in that the flexure arms (13) are bimetal strips.

25 9. Microswitch according to any one of the claims 1 to 8, characterized in that the electrostatic holding means of the membrane (12) comprise at least one electrode (15).